

REMARKS

I. SPECIFICATION, ABSTRACT, TITLE AND DRAWING

The specification has been amended to eliminate grammatical and syntax errors as well as translation errors. No new matter has been added.

The specification has also been put in a form that complies with US Patent Office Rules. Standard section headings have been added in accordance with the rules (37 C.F.R.). A cross-reference to the International Application and the priority document has been added. The figures have been deleted from the text of the specification.

In addition, a separate set of figures has been added following the specification. These added figures on new drawing sheets comprise the figures removed from the text of the specification, but changes have been made to put the figures in a form that complies with US Patent Office Rules. For example, the unlabeled Y-axes in two figures have been labeled. The figures have been labeled so as to be consistent with the description in the amended specification.

Entry of the new drawing sheets and approval of the figures are respectfully requested.

A "Brief Description of the Drawing" has been added to the specification with figure descriptions based on disclosures in the description of the examples. No new matter has been entered.

An abstract has been added on a separate sheet of paper in one paragraph in accordance with the rules, since no abstract was provided with the original US National Stage application papers. The abstract contains a summary of the subject matter claimed in the main glass ceramic claim and the claims for the products made with the glass ceramic of the present invention.

A new title that is descriptive of the invention as it is now claimed has been added.

II. NEW CLAIMS

The original claims 1 to 11, which were in the form of non-statutory “use” claims, have been replaced by new claims 12 to 20.

New independent glass ceramic claims 12 and 13 claim the glass ceramic compositions disclosed in the paragraph that bridges pages 10 and 11 of the specification. Claim 13 claims a preferred embodiment of the glass ceramic composition claimed in claim 12. New dependent claim 14 claims an embodiment supported by page 11, line 5, of the applicants’ specification.

New independent glass ceramic claims 12 and 13 are limited to glass ceramics that are essentially free of alkali. The basis for this limitation is found in page 9, first paragraph, and page 11, last paragraph.

Dependent claims 15 to 19 and independent method claim 20 contain subject matter from the original “use” claims 2 to 5 and 11.

Independent method claim 20 contains subject matter from canceled claims 1 and 3 and also from the last paragraph on page 5 and the third paragraph on page 6 of applicants’ originally filed US specification.

III. FORMAL REJECTIONS

A. Rejection under 35 U.S.C. 101

Claims 1 to 11 were rejected under 35 U.S.C. 101 for containing non-statutory subject matter.

This rejection has been obviated by cancellation of claims 1 to 11. No new “use” claims have been filed, so that new claims 12 to 20 should not be rejected under 35 U.S.C. 101.

B. Rejection under 35 U.S.C. 112, second paragraph

Claims 1 to 11 were rejected under 35 U.S.C. 112, for indefiniteness.

This rejection has been obviated by cancellation of “use” claims 1 to 11.

Only a single method claim 20 has been filed, which positively recites the step of forming a tube from the glass ceramic according to claim 12. The basis for claim 20 in the disclosure has been pointed out herein above.

The novel features of the applicants’ glass ceramic primarily involve the selection of the ingredients and their amounts, which is apparent from the original “use” claim 1. Thus the original “use” claim 1 provides the basis for claiming novel glass ceramic compositions with improved properties.

Applicants’ new claims 12 to 15 claim the novel glass ceramic compositions, as explained above.

For the aforesaid reasons it is respectfully submitted that new claims 12 to 20 should not be rejected under 35 U.S.C. 112, second paragraph.

IV. ANTICIPATION REJECTIONS

Claims 1 to 11 were rejected as anticipated under 35 U.S.C. 102 (b) by US 3,885,182, Chu, et al, (called US '182 herein below).

Claims 1 to 11 were rejected as anticipated under 35 U.S.C. 102 (b) by US 4,045,156, Chu, et al, (called US '156 herein below).

Claims 1 to 11 were rejected as anticipated under 35 U.S.C. 102 (b) by US 3,451,579, Bishop, et al, (called US '579 herein below).

Claims 1 to 11 were rejected as anticipated under 35 U.S.C. 102 (b) by US 2002/0183187, Siebers, et al, (called US '187 herein below).

Claims 1 to 11 were rejected as anticipated under 35 U.S.C. 102 (b) by Japanese Patent Document 2002173338 (called JP '338 herein below).

New claims 12 to 20 have been filed and the original claims 1 to 11 have been canceled.

The respective oxide ingredients and their accompanying concentration ranges in the new independent claim 12 are the common technical features that

distinguish the claimed subject matter from the prior art of record in accordance with PCT Rule 13 and Rule 13.1. In addition, of course new independent claim 13 and dependent claim 14 claim preferred embodiments of the glass ceramic claimed in claim 12, which are further distinguished from the prior art of record.

It is well established that **each and every limitation** of a claimed invention must be disclosed in a single prior art reference in order to be able to reject the claimed invention as anticipated under 35 U.S.C. 102 (b) based on the disclosures in the single prior art reference. See M.P.E.P. 2131 and also the opinion in *In re Bond*, 15 U.S.P.Q. 2nd 1566 (Fed. Cir. 1990).

Furthermore M.P.E.P. 2131.03 III states that a claimed composition is **not** anticipated under 35 U.S.C. 102 by a prior art reference, when a concentration range of an oxide ingredient of the claimed composition does **not** overlap or touch the concentration of that oxide ingredient in the composition disclosed by the prior art reference.

US '182 discloses a glass envelope with a composition of 8 to 20 wt. % of Li_2O and 1 to 7 wt. % of a sum of K_2O and/or Na_2O . Thus US '182 cannot anticipate applicants' claims because of the requirement in claim 12 that the claimed glass ceramic is essentially free of alkali.

US '156 (Chu) discloses a crystallized glass lamp envelop that contains 8 to 20 wt. % of Li_2O and thus cannot anticipate applicants' new claims 12 to 20

because of the requirement in claim 12 that the claimed glass ceramic is essentially free of alkali. Also the composition of US '156 necessarily also contain other alkali oxides.

US '579 claims a glass consisting essentially of from 75 to 80 wt. % of SiO₂ according to independent claims 1 and 5. This glass is also disclosed in column 2, lines 49 to 54, of US '579. Thus US '579 does not claim and disclose a glass composition with a concentration range for SiO₂ that overlaps or is close to the glass ceramic composition of applicants' claims 12 to 20. The exemplary prior art compositions in column 2 of US '579 also do not anticipate applicants' claims 12 to 20 because they contain substantial amounts of alkali.

US '187 of Siebers also disclose a glass ceramic with a composition containing at least 3.0 wt % of alkali, namely Li₂O and thus does not anticipate applicants' claims, which include the "substantially alkali-free" limitation.

The same is true for JP '338, which discloses compositions containing Li₂O as a required ingredient.

For the aforesaid reasons it is respectfully submitted that new claims 12 to 20 should not be rejected as anticipated under 35 U.S.C. 102 (b) by US 3,885,182, Chu, et al, or US 4,045,156, Chu, et al, or US 3,451,579, Bishop, et al, or US 2002/0183187, Siebers, et al, or Japanese Patent Document 2002173338.


V. INFORMATION DISCLOSURE STATEMENT

A copy of one of the prior art references listed in the information disclosure statement filed on June 28, 2006 did not accompany the information disclosure statement. A copy of the missing reference, DE 3232069, accompanies this amendment. Consideration of this DE reference and the references filed with the Information Disclosure Statement filed on June 28, 2006 is respectfully requested.

Should the Examiner require or consider it advisable that the specification, claims and/or drawing be further amended or corrected in formal respects to put this case in condition for final allowance, then it is requested that such amendments or corrections be carried out by Examiner's Amendment and the case passed to issue. Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing the case to allowance, he or she is invited to telephone the undersigned at 1-631-549-4700.

In view of the foregoing, favorable allowance is respectfully solicited.

Respectfully submitted,


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